

Psychological Effects of COVID-19: A Barrier to Job Engagement in the Egyptian Organizations

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Abstract

The objective of the research is to examine the impact of psychological effects of COVID-19 on Job Engagement (JE). The research population consists of all employees at Menoufia University hospitals in Egypt. The researcher adopted a sampling method to collect data for the study. The appropriate statistical methods were used to analyze the data and test the hypotheses.

The research has reached a number of results, the most important of which are (1) The negative psychological effects of COVID-19 have increased in Egyptian society, such as Obsessive Compulsive Disorders (OCD), Post Traumatic Stress Disorder (PTSD), and General Anxiety Disorders (GAD) among individuals in Egyptian society, (2) there is a statistically significant relationship between the psychological effects of COVID-19 (OCD) and the JE among employees in the organization. In other words, there is a negative relationship between the study variables, so the more negative psychological effects COVID-19 have, the lower the degree of JE, (3) there is a statistically significant relationship between the psychological effects of COVID-19 (PTSD) and the job link among the organization's workers. In other words, there is a negative relationship between the study variables, so the more negative psychological effects COVID-19 have, the lower the degree of JE, and (4) there is a statistically significant relationship between the psychological effects of COVID-19 (GAD) and JE among the organization's workers. In other words, there is a negative relationship between the study variables, so the more negative psychological effects COVID-19 have, the lower the degree of work association.

The study referred to a number of recommendations, the most important of which are (1) the necessity of making strategic alliances in the medical field and the technological field between South Korea and the rest of the world in order to benefit from its experience in the field of confronting COVID-19, (2) the necessity of conducting many research and studies in the field of artificial intelligence as one of the tools that can be used in facing COVID-19, (3) increasing awareness campaigns on COVID-19 and viewing it as a disease like other diseases that require diagnosis and treatment, (4) seeking assistance from specialists in awareness programs and disseminating all information through social media for the purpose of awareness and prevention of infection COVID-19, (5) providing psychological service to COVID-19 patients inside hospitals in a manner that raises their spirits and confronts this virus, (6) the necessity for the Egyptian Ministry of Health to enhance the level of mental health for all members of society by establishing a psychological aid unit and taking over work to reduce the psychological anxiety from COVID-19, (7) spreading positive feelings among enough community members through the media, explaining that COVID-19 will be overcome, and providing the necessary awareness programs to reduce anxiety problems and sleep disorders, (8) researchers and scholars in the field of psychology and mental health conduct research and studies through which counseling and validation programs for community members are published, and (9) expanding the study of psychological immunology, and focusing on the psychological immunity variables in reducing the negative effects of COVID-19.

Keywords: Psychological Effects, COVID-19, Job Engagement

1. Introduction

Corona Virus Disease 2019 (COVID-19) appeared in Wuhan, China at the end of 2019, and then spread to most countries of the world at the beginning of 2020 (Chan et al, 2020).

COVID-19 has recorded 228,376 deaths, 3229966 infected, 1006,988 cures spread over 212 countries. The United States of America, Spain, Italy, Germany, the United Kingdom, France, Turkey, Iran and China are the countries most affected by the spread of COVID-19 (Elflein, 2020 A).

The number of COVID-19 cases in South Korea has escalated frighteningly after 31 cases were recorded, while the number of deaths from the first COVID-19 infection to April 20, 2020, has reached 247 deaths (Elflein, 2020 B).

The numbers recorded in South Korea are very good, as the deaths and injuries are among the least countries compared to other countries, and the United States of America recorded 228,376 deaths until April 2020 compared to South Korea, which recorded 247 deaths until April 2020 (Elflein, 2020 C).

COVID-19 has created a state of fear and anxiety among all peoples, and the patterns of life and social relations have changed, as stress, anxiety, and depression increased in Chinese society specifically in the initial period of its spread (Wang et al, 2020).

The pressures that an individual hears through the news every day about injuries and deaths in the media are among the most important reasons behind fear of COVID-19, which led to individuals feeling fear, terror and anxiety (Lin, 2020).

Fear of COVID-19 is one of the most important predictors of pressures exerting on it, and that is why it is called Corona Phobia or Corona Anxiety, all of which are emotional states that accompany the individual because there is a source of threat (Sun et al, 2020).

The spread of COVID-19 has led to the exposure of all categories of societies to unprecedented changes in a short period of time, such as changes in lifestyle, health care systems, prevention of movement, suspension of flights, and devastation of the economy in many countries (Viswanath & Monga, 2020).

The spread of COVID-19 has also led to home quarantine procedures, travel restrictions, constant examination and monitoring of all individuals in the community, and the spread of a large amount of misinformation through social media (Baberjee, 2020).

Community members live in a state of anxiety and tension on a large scale that humanity has not witnessed before due to the frightening figures that were reported by local and international media on the numbers of injuries and deaths due to COVID-19 (Velavan & Meyer, 2020).

Community members also feel alienated, and symptoms of depression, stress, and stress increased (Dong & Bouey, 2020).

COVID-19 has turned into a global pandemic, with very frightening numbers that surpassed the SARS epidemic. In general, there is a state of boredom and panic among all members of society (Zhai & Du, 2020).

COVID-19 has caused a psychological and social impact on the world level, as well as collective fear, economic burdens and financial losses, which led to the emergence of a large number of negative psychological manifestations such as tension, anxiety, depression, stress, boredom, and distress among all classes of society (Dubey et al, 2020).

COVID-19 has caused many more disturbances in Egyptian society than its counterpart in other cultures, and perhaps this is related to the fact that some studies have been conducted in other societies, especially in Chinese society, which made them deal with COVID-19 and work to limit its spread, unlike the Egyptian environment.

COVID-19 has left negative psychological effects in Egyptian society such as anxiety, distress, fear, and boredom. This is in addition to other social problems such as lack of communication with family and friends, as well as economic problems such as financial pressures, loss of work, and the many demands of life.

2. Literature Review

2.1. COVID-19

2.1.1. COVID-19 Concept

COVID-19 is an animal-based virus that is transmitted to humans upon close contact with farm animals or wild animals infected with this virus, but despite this, this virus remains and needs more research to determine its exact source (World Health Organization, 2020).

COVID-19 is a broad strain of viruses that may cause disease in animals and humans. It is known that a number of corona viruses cause respiratory diseases in humans, whose severity ranges from common colds to more severe diseases such as MERS and SARS (World Health Organization, 2020).

COVID-19 is an animal virus that developed and turned into a human virus that is transmitted from one person to another, that is, it is one of the diseases that affect the respiratory system. COVID-19 spreads through infection from an infected person and has symptoms of the disease such as heat, cough, difficulty breathing, through droplets resulting from coughing and sneezing, close personal contact with an infected person, touching an object or surface with the virus on it, and then touching the mouth, nose, or eyes without washing hands (US Public Health Administration).

2.1.2. Psychological Effects of COVID-19

The psychological effects of COVID-19 on all individuals in society varied. Many studies have been carried out in all countries of the world, such as the United States of America, China, and the United Kingdom, in order to identify the psychological effects resulting from the spread of COVID-19 and its reflection on the behavior of individuals within society, and some of these effects are as follows:

1. COVID-19 does not affect the physical health of the individual, but rather negatively affects the mental health of the patient and non-patient, and these effects appear in the form of fear, anxiety, tension, and instability in general (Lima et al, 2020)
2. The psychological effects resulting from COVID-19 are fear, depression, OCD, panic, anxiety, tension and others, and all of these factors are negatively reflected on workers in all organizations of all types and sizes in a way that leads to a decrease in the degree of employee engagement and low performance (Dubey et al, 2020).
3. Anxiety and fear are among the most important psychological effects resulting from COVID-19, and this reflects negatively on students in different educational stages. Therefore, family stability and support are among the most important factors that contribute to reducing anxiety and fear among their members (Cao et al, 2020).
4. Anxiety, depression, stress, and OCD are among the most important negative effects resulting from COVID-19, which negatively affects the morale of workers, which leads to difficulty in carrying out the tasks assigned to them (Rajkumar, 2020).
5. Anxiety, depression, and stress are among the most important negative psychological effects on workers, which is reflected in the level of their general performance within the organization. Therefore, psychological support plays an important role in reducing the psychological effects resulting from COVID-19 and thus improving the level of performance of staff (Wang et al, 2020).
6. The psychological effects affecting employees as a result of COVID-19 are fear for their families, fear of infecting colleagues, fear of infection risks, and depression. Psychological support plays an important role in reducing the negative psychological effects of COVID-19 (Dai et al, 2020).
7. The bad psychological effects of COVID-19 are anxiety, stress, depression, fear, insomnia, and others. Therefore, safety measures that must be followed such as rest periods, psychological support, and the provision of a healthy lifestyle contribute to reducing the negative psychological effects of on COVID-19 (Blake et al, 2020).
8. Women are more likely than men in terms of psychological effects from the spread of COVID-19, and the most important of these effects are anxiety, mental stress, depression, stress, and fear (Badahdah et al, 2020).
9. Anxiety and depression are among the most important negative psychological effects resulting from COVID-19, which leads to social problems among community members (Bhat et al, 2020).
10. Anxiety and depression are among the most important negative psychological effects of COVID-19, which leads to an increase in psychological and mental symptoms among community members (Cullen et al, 2020).
11. Anxiety, stress, and depression are among the most important negative effects resulting from COVID-19, which greatly affect young people with chronic diseases compared to others (Ozamiz et al, 2020).
12. High anxiety and disease delusions are among the most important negative effects of COVID-19, and there is also an inverse relationship between knowledge of COVID-19 and anxiety about infection (Jungmann & Witthoft, 2020).
13. OCD, personal sensitivity, phobia, and anxiety are among the most important psychological symptoms resulting from COVID-19, and there are no differences between males and females in terms of psychological symptoms resulting from COVID-19 (Wang et al, 2020).

14. Students in rural areas are less likely than students in big cities in terms of the psychological effects of COVID-19 (Cao et al, 2020).
15. Teachers in various destinations have turned to virtual education, and adherence to quarantine procedures, in order to reduce the negative effects of COVID-19 (Joy & Toquero, 2020).
16. The level of anxiety increases when infected with COVID-19, which results in an increase in the manifestations of disorder, drug abuse, and the spread of suicidal thoughts among community members (Lee, 2020).
17. The level of anxiety increases, and symptoms of depression increase in young people compared to the elderly, in addition to sleep disturbances and other negative effects resulting from COVID-19 (Huang & Zhao, 2020).
18. Females are the most vulnerable groups to anxiety and depression. In addition to that, urban residents are the most common groups that have mental disorders resulting from COVID-19 (Ozdin & Ozdin, 2020).

After examining the previous psychological effects of COVID-19, the researcher can limit these effects to the following (Rajkumar, 2020, Wang et al, 2020):

2.1.2.1. Obsessive Compulsive Disorders

The spread of COVID-19 has led to the infection of many community members with OCD such as fears of contracting the virus, and exaggerated application in terms of hand washing, sterilization, and others (Liu et al., 2020).

The spread of COVID-19 has also led to social distancing, quarantine, increased feelings of detachment and isolation, depression, and a general sense of instability (Fineberg, 2020).

2.1.2.2. Post-traumatic Stress Disorder

There are many and varied disorders that may affect an individual after psychological trauma, and these symptoms are depression, headache, difficulty concentrating, anger attacks, inability to express, and difficulty solving problems, which is reflected in the individual's personal life path (Lee, 2020).

Anxiety plays an important role in affecting individuals suffering from OCD, which leads to the emergence of new symptoms that have implications for the psychological state of the individual (Liu, 2020).

2.1.2.3. Generalized Anxiety Disorder

Anxiety is a disorder, and it has multiple effects such as mental illnesses for community members (Cao et al, 2020).

Anxiety disorder refers to a group of mental disorders characterized by feelings of anxiety, dysphoria, and fear, including Generalized Anxiety Disorder (GAD), Obsessive Compulsive Disorder (OCD), and Posttraumatic Stress Disorder (PTSD) (Wittchen, 2002).

Anxiety is a general mood that occurs in the individual without knowing the motives behind it. Anxiety is different from fear, in that fear occurs in the presence of a perceived threat while anxiety is the result of threats that cannot be controlled or avoided. Fear is associated with specific behaviors such as fleeing and avoiding, while anxiety is associated with fatigue, muscle spasms, and problems with concentration. In general, the feeling of anxiety and fear appears in the form of an exaggerated reaction to a particular situation (Barker, 2017).

Anxiety is considered a normal response to a state of stress that the individual feels, and when anxiety increases, it falls under the classification of anxiety disorders (Sylvers, et al, 2011).

Anxiety is an unpleasant feeling that is accompanied by fear of anticipated events such as fear of death or the occurrence of a certain accident (Davison, 2008).

Anxiety is a future-oriented mood in which the individual is prepared to try to deal with upcoming negative events (Stolker et al, 2001).

Anxiety is a physiological condition that occurs in an individual as a result of an unpleasant feeling associated with discomfort and fear. Anxiety is often accompanied by behaviors that reflect a state of tension and discomfort, and the individual also shows physical symptoms that reflect the state of anxiety he feels (Barlow, 2000).

2.2. Job Engagement

2.2.1. The Concept of Job Engagement

Job Engagement (JE) is the emotional link between the employee and the organization, in which he works (Joshi & Sodhi, 2011).

JE means that employees do what they are told and adapt their work according to job description and in light of the traditional work environment (Frese, 2008).

JE is the involvement and enthusiasm of the employee to the organization in terms of being ready to devote more effort and innovation in cooperation with the rest of his colleagues, and adapting, effectively, to the changes in the surrounding environment under the contemporary organizational environment characterized by global pressures, intensive customers' demands, low supervision, growing technology, and increasing need for teamwork and communication (Griffin et al., 2008).

JE means that the individual likes to do or interested in the work he is associated with, since individuals who love their jobs are working with more productivity and efficacy (Pollock, 1997). JE represents the degree to which the individual merges with the job he exercises by sensing its importance. JE is associated with both the mental and emotional aspects (Riipinen, 1997). JE means that the employee is aware of the nature of work in the organization, and working closely with co-workers in order to improve the functionality for the benefit of the organization (Bevan et al, 1997).

JE is the internal merging of the individual to work, or the psychological congruence and responding to work, something which will affect the individual self-achievement or his commitment to work (Kanungo, 1982).

There are three basic elements of JE. They are (1) work as the primary interest of man's life, (2) active participation in labor, (3) performance as the basis of self-realization, and (4) performance association with self-conception (Rasmey et al, 1995).

JE is the commitment and communication of the employee to the job and the organization to which he works (Sweem, 2008).

There are three key aspects to encourage the employee engagement which are (1) workers' experience and their psychological and personal affairs, (2) employers and their ability to create the conditions that encourage employees' engagement and (3) interaction among all employees in the organization (Tiwari, 2011).

2.2.2. Dimensions of Job Engagement

There are three main dimensions of JE. They are as follows (Rich et al., 2010)

2.2.2.1. Cognitive Engagement

Cognitive engagement means that individuals are fully engaged in exercising the tasks they are assigned with (Rothbard, 2001). Engaged individuals focus intensely on the task given to them within the organization (Rich et al., , 2010).

2.2.2.2. Emotional Engagement

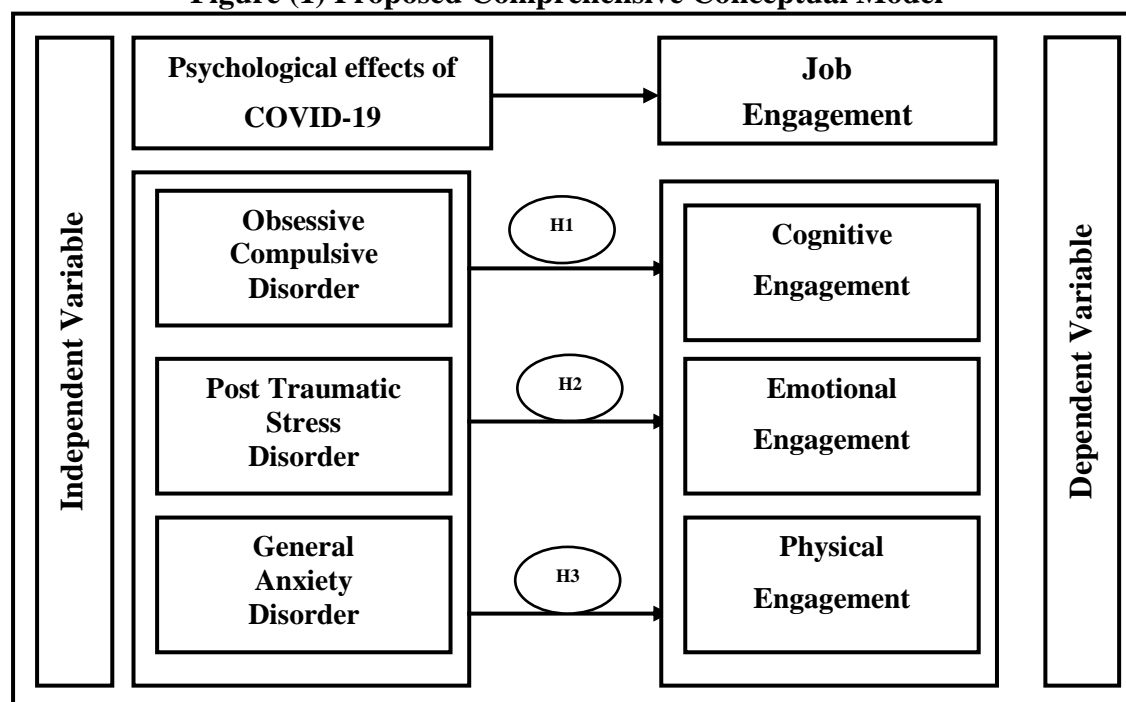
Emotional engagement means the existence of a strong relationship between emotions, thoughts, and feelings of the individual and the organization, to which he works (Kahn, 1990). This increases feelings of enthusiasm and pride of the individual towards the organization (Rich et al., 2010).

2.2.2.3. Physical Engagement

Physical engagement means directing man's physical energies towards the completion of a specific task in a way that contributes to achieving the organization's objectives efficiently and effectively (Rich et al., 2010).

3. Research Model

Figure (1) Proposed Comprehensive Conceptual Model



The diagram shows that there is one independent variable of psychological effects of COVID-19. There is one dependent variable of JE.

Psychological effects of COVID-19 is measured in terms of OCD, PTSD and GAD (Rajkumar, 2020; Wang et al., 2020).

JE is measured in terms of cognitive engagement, emotional engagement, and physical engagement (Rich et al., 2010).

4. Research Questions

The topic of COVID-19 is one of the modern topics of the day, as time has become available for conducting academic and scientific research and studies in this field. Therefore, this study is of great importance in providing an academic reference on which researchers rely in studying such topics in the future.

There is a group of viruses known to cause diseases ranging from colds to more serious diseases, as happened with MERS and SARS (World Health Organization, 2020).

The world is currently witnessing a new health pandemic, which specialists initially called COVID-19. After that, it was agreed on the scientific name for it COVID-19. It is a respiratory disease that causes SARS to attack the respiratory system and lead to many diseases such as fever, cough, and difficulty breathing. It may also lead to death by 3.4% of the number of infected people (World Health Organization, 2020).

COVID-19 appeared in mid-December 2019, and spread to China and then to the rest of the world. This virus has caused several negative effects on various social, economic, political, cultural and other fields, which prompted countries of the world to adopt different methods to confront this virus, which was classified as a pandemic in March 2020 (World Health Organization, 2020).

The spread of COVID-19 has affected global mental health, as it has led to a high rate of psychological stress, anxiety, symptoms of depression, anger, and pathological violations among all members of society (Torales et al., 2020).

The spread of COVID-19 has changed human life in various countries of the world, whether developed or developing, and problems of fear, trauma, depression, and anxiety have spread (Joy & Toquero, 2020).

COVID-19 has become the main source of fear, tension, and anxiety around the world (Kim & Su, 2020, Reznik, 2020).

COVID-19 has led to the spread of anxiety among all members of society, as rates of anxiety and depression ranged between 16-28% during COVID-19. Also, psychological stress reached 8%, in addition to other psychological disorders such as hypochondria and sleep disorders (Rajkumar, 2020).

Mental immunity plays an important role in mitigating the negative effects of COVID-19, and these variables are resilience, recovery, coping strategies, mindfulness, social support, and orientation towards long-term goals (Polizzi, et al, 2020).

The research problem has two sources. The first source is to be found in previous studies. There is a lack in the number of literature review that dealt with the analysis of the relationship between psychological effects of COVID-19 and JE. This called for the researcher to test this relationship in the Egyptian environment.

In light of the review of previous studies towards psychological effects of COVID-19, there is a study aimed at exploring the effects of COVID-19 on mental health, economics, and social life. The study found that 67.5% of the sample individuals had increased psychological problems such as anxiety and depression, and that 53.5% had social problems (Bhat et al, 2020).

There is another study that aimed at identifying mental health in the period of COVID-19 in a Chinese city. The study found an increase in anxiety symptoms in 29% of the sample, and an increase in depression symptoms in 17% of the sample, which led to an increase in psychological and mental symptoms (Cullen, et al, 2020).

There is another study interested in identifying levels of stress, anxiety, and depression in the first period of COVID-19 in a Spanish city. The study found high rates of stress, anxiety, and depression among the sample members, and it also increased significantly among young people with chronic diseases compared to others (Ozamiz et al, 2020).

There is a study that aimed at identifying health anxiety and delusions during the COVID-19 period in a German city. The study found a rise in anxiety associated with COVID-19 and hypochondria. The study also indicated that there is an inverse relationship between knowledge of COVID-19 and anxiety about infection (Jungmann & Witthoft, 2020).

There is another study concerned with learning about psychological diseases of Chinese citizens during the first period of COVID-19. The study found an increase in the psychological symptoms of OCD, personal sensitivity, phobia, and anxiety. The study indicated that there are no differences between males and females in terms of psychological symptoms of COVID-19 (Wang et al, 2020).

The second source is the pilot study, which was conducted an interview with (30) employees at Menoufia University hospitals in Egypt. The researcher found several indicators notably the important role that could be played by COVID-19 in affecting JE. The research questions of this study are as follows:

Q1: What is the relationship between psychological effects of COVID-19 (OCD) and JE at Menoufia University hospitals in Egypt?

Q2: What is the nature of the relationship between psychological effects of COVID-19 (PTSD) and JE at Menoufia University hospitals in Egypt?

Q3: What is the extent of the relationship between psychological effects of COVID-19 (GAD) and JE at Menoufia University hospitals in Egypt?

5. Research Hypotheses

In the light of a review of previous studies towards psychological effects of COVID-19, there is a study that aimed at identifying the psychological impact of COVID-19 on university students in a major Chinese city. The study found that 90% of the total sample have severe anxiety, 2.7% have moderate anxiety, and 21.3% have low anxiety. The study also indicated that students in rural areas are less anxious than students in large cities (Cao et al, 2020).

Another study aimed at learning how teachers in a Philippine city deal with the anxiety associated with COVID-19. The study found that teachers turned to virtual learning, and adhering to quarantine measures, in order to reduce anxiety associated with COVID-19 (Joy & Toquero, 2020).

Another study aiming to identify the anxiety associated with COVID-19 found a high level of anxiety during COVID-19 infection, higher manifestations of disorder, drug abuse, and the spread of suicidal thoughts during COVID-19 (Lee, 2020).

Another study aimed at identifying anxiety, depression, and sleep quality during the period of COVID-19 in a Chinese city. The study found a higher level of anxiety and more depressive symptoms among young people compared to the elderly, in addition to multiple disturbances during sleep (Hung & Zhao, 2020).

There is also another study aiming at identifying levels of anxiety, depression, and health anxiety during COVID-19 in a Turkish city. The study found that females are the most vulnerable groups to health anxiety and depression. In addition, individuals who inhabit geographical regions are more groups with mental disorders compared to others (Ozdin & Ozdin, 2020).

The following hypotheses were developed to decide if there is a significant correlation between psychological effects of COVID-19 and JE.

H1: There is no statistically significant relationship between psychological effects of COVID-19 (OCD) and JE at Menoufia University hospitals in Egypt.

H2: Psychological effects of COVID-19 (PTSD) have no statistically significant effect on JE at Menoufia University hospitals in Egypt.

H3: There is no relationship between psychological effects of COVID-19 (GAD) and JE at Menoufia University hospitals in Egypt.

6. Research Population and Sample

The population of the study included all employees at Menoufia University Hospitals in Egypt. The total population is 3307 employees. The following equation determines the sampling size (Daniel, 1999):

$$n = \frac{N \times (Z)^2 \times P(1-P)}{d^2(N-1) + (Z)^2 \times P(1-P)}$$

The number of samples obtained by 344 employees at Menoufia University Hospitals in Egypt is presented in Table (1).

Table (1) Distribution of the Sample Size on the Population

Job Category	Number	Percentage	Size of Sample
Physicians	488	15%	344X 15% = 52
Nurses	2141	65%	344 X 65% = 224
Administrative Staff	678	20%	344 X 20% = 68
Total	3307	100%	344 X 100% = 344

Source: Personnel Department at Menoufia University, 2020

Table (2) Characteristics of Items of the Sample

Demographic Variables	Number	Percentage	
1- Job Title	Physicians	120	40%
	Nurses	130	43%
	Administrative	50	17%
	Total	300	100%
2- Gender	Male	190	63%
	Female	110	37%
	Total	300	100%
3- Marital Status	Single	130	43%
	Married	170	57%
	Total	300	100%
4- Age	From 30 to 45	120	40%
	Above 45	180	60%
	Total	300	100%
5- Educational Level	University	170	57%
	Post Graduate	130	43%
	Total	300	100%
6- Period of Experience	From 5 to 10	180	60%
	More than 10	120	40%
	Total	300	100%

7. Procedure

The goal of this study was to identify the impact of psychological effects of COVID-19 on JE. A survey research method was used to collect data. The questionnaire included three questions, relating to psychological effects of COVID-19, JE, and biographical information of employees at Menoufia University hospitals in Egypt. About 344 survey questionnaires were distributed. Multiple follow-ups yielded 300 statistically usable questionnaires. Survey responses were 87%.

8. Research Variables and Methods of Measuring

The 13-item scale psychological effects of COVID-19 section is based on Rajkumar, 2020; Wang et al., 2020. There were five items measuring OCD, four items measuring PTSD, and four items measuring GAD.

The 18-item scale JE section is based on Rich et al., 2010. There were six items measuring cognitive engagement, six items measuring emotional engagement, and six items measuring physical engagement.

Responses to all items scales were anchored on a five (5) point Likert scale for each statement which ranges from (5) “full agreement,” to (1) for “full disagreement”.

9. Data Analysis and Hypotheses Testing

9.1. Coding of Variables

The research consists of two main variables. The first is psychological effects of COVID-19 (independent variable). The second is JE (dependent variable). Each variable consists of sub-variables. Description and measuring of the research variables is presented in Table (3) as follows:

Table (3) Description and Measuring of the Research Variables

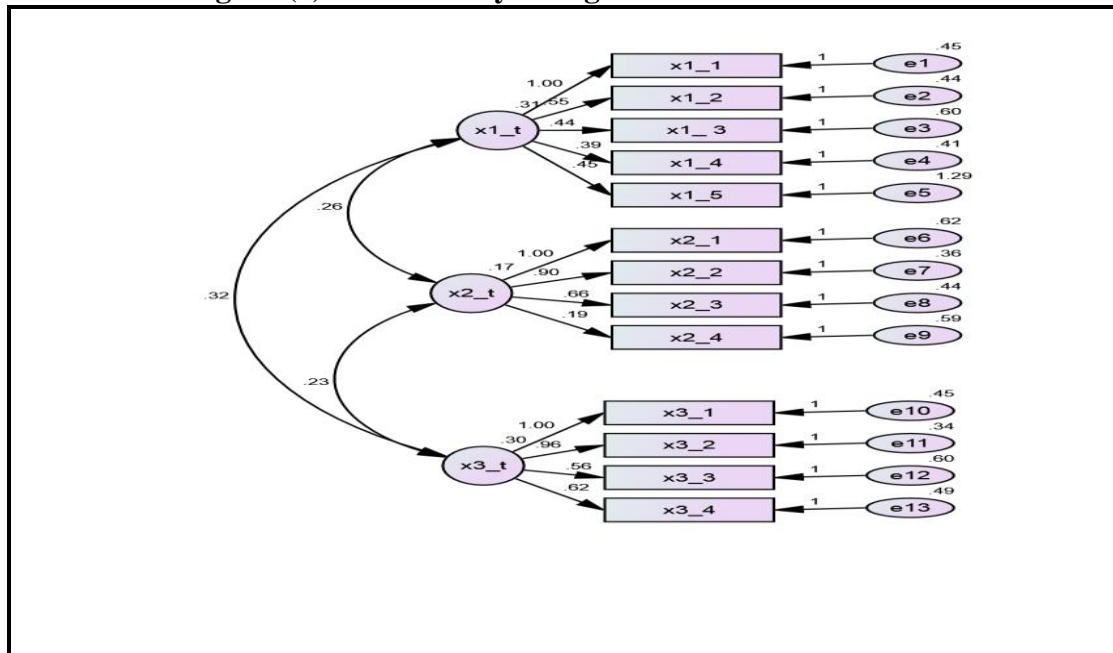
Main Variables		Sub-Variables	Number of Statement	Methods of Measuring Variables
Independent Variable	Psychological Effects of COVID-19	Obsessive Compulsive Disorder	5	Rajkumar, 2020 Wang et al., 2020
		Posttraumatic Stress Disorder	4	
		General Anxiety Disorder	4	
Total Psychological Effects of COVID-19			13	
Dependent Variable	Job Engagement	Cognitive Engagement	6	Rich et al., 2010
		Emotional Engagement	6	
		Physical Engagement	6	
Total JE			18	

9.2. Construct Validity

9.2.1. Psychological Effects of COVID-19

The researcher used Confirmatory Factor Analysis (CFA) for psychological effects of COVID-19. This can be illustrated by the following figure:

Figure (2) CFA For Psychological Effects of COVID-19



From the previous figure, it is clear that all the statement of psychological effects of COVID-19 are greater than 0.50, which corresponds to GFI. This is a good indicator of all other statistical analysis. The quality indicators for psychological effects of COVID-19 can be illustrated in the following table:

Table (4)
Quality Indicators for Psychological Effects of COVID-19 Using AMOS Analysis

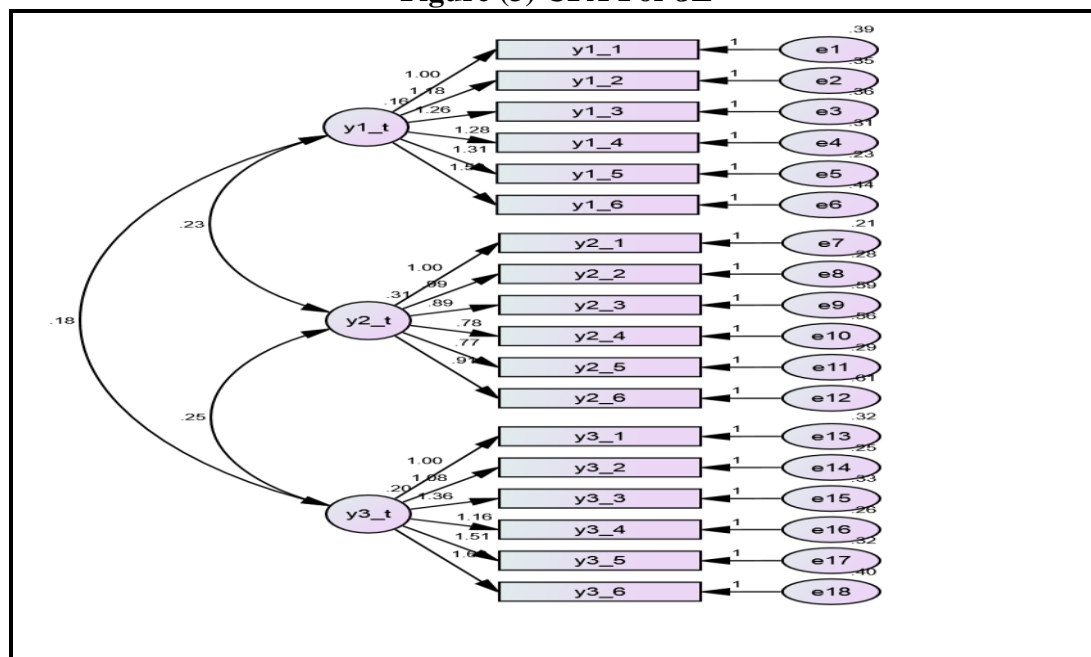
Test the Quality of the Model Acceptance Condition (Daire et al., 2008)	Test Value
$X^2 / \text{Degree of freedom} > 5$	189.591
P. value > 0.5	0.000
Goodness of fit Index (GFI) > 0.90	0.904
Tuker-Lewis Index (TLI) > 0.95	0.743
Comparative Fit Index (CFI) > 0.90	0.796
Normed Fit Index (NFI) > 0.90	0.731
Incremental Fit Index (IFI) > 0.95	0.801
Relative Fit Index (RFI) > 0.90	0.661
Root Mean Square Residual (RMR) < 0.5	0.047
Root Mean Square Error of Approximation (RMSEA) < 0.5	0.083

In light of the above-mentioned indicators, it is clear that the previous indicators are good for making all other statistical analysis.

9.2.2. Job Engagement

The researcher used CFA for JE which consists of three dimensions. This can be illustrated by the following figure:

Figure (3) CFA For JE



According to Figure (2), it is clear that all the statement of JE are greater than 0.50. This is a good indicator of all other statistical analysis. The quality indicators for JE can be illustrated in the following table:

Table (5) Quality Indicators for JE Using AMOS Analysis

Test the Quality of the Model Acceptance Condition (Daire et al., 2008)	Test Value
X^2 / Degree of freedom < 5	836.482
P. value > 0.5	0.000
Goodness of fit Index (GFI) > 0.90	0.765
Tuker-Lewis Index (TLI) > 0.95	0.740
Comparative Fit Index (CFI) > 0.95	0.776
Normed Fit Index (NFI) > 0.90	0.746
Incremental Fit Index (IFI) > 0.95	0.778
Relative Fit Index (RFI) > 0.90	0.706
Root Mean Square Residual (RMR) < 0.5	0.043
Root Mean Square Error of Approximation (RMSEA) < 0.5	0.134

In light of the above-mentioned indicators, it is clear that the previous indicators are good for making all other statistical analysis.

9.3. Descriptive Analysis

Table (6)
Mean and Standard Deviations of Psychological Effects of COVID-19 and JE

Variables	The Dimension	Mean	Standard Deviation
Psychological Effects of COVID-19	Obsessive Compulsive Disorder	2.25	0.493
	Posttraumatic Stress Disorder	2.07	0.454
	General Anxiety Disorder	2.05	0.562
	Total Measurement	2.13	0.410
Job Engagement	Cognitive Engagement	3.46	0.565
	Emotional Engagement	3.46	0.562
	Physical Engagement	3.47	0.613
	Total Measurement	3.46	0.548

According to Table (6), most of the respondents identified the presence of psychological effects of COVID-19 (OCD) (M=2.25, SD=0.493), psychological effects of COVID-19 (PTSD) (M=2.07, SD=0.454),

psychological effects of COVID-19 (GAD) (M=2.05, SD=0.562), and total psychological effects of COVID-19 (M=2.13, SD=0.410).

Regarding to JE, most of the respondents identified the presence of a cognitive engagement (M=3.46, SD=0.565). This was followed by emotional engagement (M=3.46, SD=0.562), physical engagement (M=3.47, SD=0.613), and total JE (M=3.47, SD=0.613).

9.4. Evaluating Reliability

Table (7) presents the reliability of psychological effects of COVID-19. The 13 items of psychological effects of COVID-19 are reliable because the ACC is 0.746. OCD, which consists of 5 items, is reliable because the ACC is 0.734. The 5 items related to PTSD, are reliable because the ACC is 0.632 while the 5 items of GAD are reliable because the ACC is 0.629. Thus, the internal consistency of psychological effects of COVID-19 can be acceptable.

Table (7) Reliability of Psychological Effects of COVID-19 and JE

Variables	Dimension	Number of Statement	ACC
Psychological Effects of COVID-19	Obsessive Compulsive Disorder	5	0.734
	Post Traumatic Stress Disorder	4	0.632
	General Anxiety Disorder	4	0.629
	Total Measurement	13	0.746
Job Engagement	Cognitive Engagement	6	0.817
	Emotional Engagement	6	0.777
	Physical Engagement	6	0.857
	Total Measurement	18	0.933

The 18 items of JE are reliable because the ACC is 0.933. The cognitive engagement, which consists of 6 items, is reliable because the ACC is 0.817. The 6 items related to emotional engagement are reliable because ACC is 0.777 while the last six-item variable (physical engagement) is reliable because the ACC is 0.857. Thus, the reliability of JE can be acceptable.

9.5. The Means, St. Deviations and Correlation among Variables

Table (8) Means, Standard Deviations and Intercorrelations among Variables

Variables	Mean	Std. Deviation	Psychological Effects of COVID-19	JE
Psychological Effects of COVID-19	2.13	0.410	1	
Job Engagement	3.46	0.548	0.654**	1

Table (8) shows correlation coefficients between psychological effects of COVID-19 and JE. Psychological effects of COVID-19 is (Mean=2.13; SD=0.410), while JE is (Mean=3.46; SD= 0.548). Also, the correlation between psychological effects of COVID-19 and JE is (R=0.654; P <0.01).

9.6. The Correlation between Psychological Effects of COVID-19 and JE

**Table (9)
Correlation Matrix between Psychological Effects of COVID-19 and JE**

Research Variables	1	2	3	4
Obsessive Compulsive Disorder	1			
Post Traumatic Stress Disorder	0.429**	1		
General Anxiety Disorder	0.545**	0.505**	1	
Job Engagement	0.576**	0.451**	0.558**	1

Based on Table (9), correlation between psychological effects of COVID-19 (OCD) and JE is 0.576 whereas psychological effects of COVID-19 (PTSD) and JE shows correlation value of 0.451. Also, psychological effects of COVID-19 (GAD) and JE is 0.558. The overall correlation between psychological effects of COVID-19 and JE is 0.654.

9.6.1. Psychological Effects of COVID-19 (OCD) and JE

Table (10) MRA Results for Psychological Effects of COVID-19 (OCD) and JE

Psychological Effects of COVID-19 (OCD)	Beta	R	R ²
1. I have the power to overcome bad thoughts related to the epidemic.	0.298**	0.403	0.162
2. I can overcome the idea of my inevitable infection with the virus.	0.182**	0.328	0.107
3. I follow the moderation in prevention measures and not exaggerate the pathology.	0.089**	0.263	0.055
4. I do not doubt that everyone around me may be infected.	0.147**	0.292	0.085
5. I do not resort to the drugs used to treat the virus as long as I am not infected.	0.283**	0.357	0.127
<ul style="list-style-type: none"> ▪ MCC ▪ DC ▪ Calculated F ▪ Degree of Freedom ▪ Indexed F ▪ Level of Significance 		0.589	0.347
		31.298	5, 294
		3.01	0.000

As Table (10) proves, the MRA resulted in the R of 0.589 demonstrating that the 5 independent variables of psychological effects of COVID-19 (OCD) construe JE significantly. Furthermore, the value of R², 5 independent variables of psychological effects of COVID-19 (OCD) can explain 0.34% of the total factors in JE level. Hence, 66% are explained by the other factors. Therefore, there is enough empirical evidence to reject the null hypothesis that it said there is no relationship between psychological effects of COVID-19 (OCD) and JE.

9.6.2. Psychological Effects of COVID-19 (PTSD) and JE

Table (11) MRA Results for Psychological Effects of COVID-19 (PTSD) and JE

Psychological Effects of COVID-19 (PTSD)	Beta	R	R ²
1. I have no difficulty falling asleep and concentrating.	0.227**	0.325	0.105
2. I can control my emotions.	0.200**	0.313	0.097
3. I do not resort to taking sedative medications.	0.258**	0.324	0.104
4. I do not tend to be alone at rest.	0.059	0.098	0.001
<ul style="list-style-type: none"> ▪ MCC ▪ DC ▪ Calculated F ▪ Degree of Freedom ▪ Indexed F ▪ Level of Significance 		0.475	0.226
		21.485	5, 294
		3.31	0.000

As Table (11) proves, the MRA resulted in the R of 0.475. This means that JE has been significantly explained by the 4 independent variables of psychological effects of COVID-19 (PTSD). As a result of the value of R², the four independent variables of psychological effects of COVID-19 (PTSD) justified 22% of the total factors in JE. Hence, 78% are explained by the other factors. So, there is enough empirical evidence to reject the null hypothesis that it said there is no relationship between psychological effects of COVID-19 (PTSD) and JE.

9.6.3. Psychological Effects of COVID-19 (GAD) and JE

Table (12) MRA Results for Psychological Effects of COVID-19 (GAD) and JE

Psychological Effects of COVID-19 (GAD)	Beta	R	R ²
1. I have confidence in the healing of a large number of patients.	0.075	0.303	0.091
2. I do not see this disease as dangerous, it is just a virus that can be cured.	0.397**	0.520	0.270
3. I have the ability to take fateful decisions without fear or hesitation.	0.172**	0.357	0.127
4. I do not feel tired until a long time has passed in doing my job.	0.148**	0.359	0.128

▪ MCC	0.586
▪ DC	0.344
▪ Calculated F	38.659
▪ Degree of Freedom	5, 294
▪ Indexed F	3.31
▪ Level of Significance	0.000

As Table (12) proves, the MRA resulted in the R of 0.586 demonstrating that the 4 independent variables of psychological effects of COVID-19 (GAD) construe JE significantly. Furthermore, the value of R^2 , 4 independent variables of psychological effects of COVID-19 (GAD) can explain 0.34% of the total factors in JE level. Hence, 66% are explained by the other factors. Therefore, there is enough empirical evidence to reject the null hypothesis that it said there is no relationship between psychological effects of COVID-19 (GAD) and JE.

10. Research Results

- The negative psychological effects of COVID-19 have increased in Egyptian society, such as OCD, PTSD, and GAD among individuals in Egyptian society in terms of:
 - Changing lifestyles and social relationships, increasing stress, anxiety, depression, changing health care systems, preventing movement, stopping flights, and spreading a large amount of misinformation through social media.
 - Individuals are living in a state of anxiety and tension on a large scale that humanity has not witnessed before, due to the frightening numbers that were reported through local and international media about the numbers of injuries and deaths due to COVID-19.
 - Feelings of fear, economic burdens and financial losses led to the emergence of a large number of negative psychological manifestations such as tension, anxiety, depression, stress, boredom, and distress among all classes of society.
 - General disorder and negative psychological effects such as anxiety, distress, fear, and boredom, in addition to social and economic problems were found among the Egyptian community.
- There is a statistically significant relationship between the psychological effects of COVID-19 (OCD) and the JE among employees in the organization. In other words, there is a negative relationship between the study variables, so the more negative psychological effects COVID-19 have, the lower the degree of JE. The spread of COVID-19 has led to the infection of many members of the Egyptian community with OCD such as fears of contracting the virus, and the exaggerated application in terms of hand washing, sterilization, and others. Also, the spread of COVID-19 has also led to social distancing, quarantine, and isolation, depression, and a general sense of instability for individuals in Egyptian society.
- There is a statistically significant relationship between the psychological effects of COVID-19 (PTSD) and the job link among the organization's workers. In other words, there is a negative relationship between the study variables, so the more negative psychological effects COVID-19 have, the lower the degree of JE. The spread of COVID-19 has led to the multiplicity and diversity of disorders that may affect an individual after psychological trauma, and these symptoms are depression, headache, difficulty concentrating, outbursts of anger, inability to express, and difficulty solving problems, which has an impact on the individual's personal life path. Anxiety also plays an important role in affecting individuals suffering from PTSD, which leads to the emergence of new symptoms that have implications for the psychological state of individuals in Egyptian society.
- There is a statistically significant relationship between the psychological effects of COVID-19 (GAD) and JE among the organization's workers. In other words, there is a negative relationship between the study variables, so the more negative psychological effects COVID-19 have, the lower the degree of work association. The spread of COVID-19 has led to a psychological state that forms in the individual as a result of an unpleasant feeling associated with uneasiness and fear, and anxiety is often accompanied by behaviors that reflect a state of tension and unease. Also, the individual shows physical symptoms that reflect the state of anxiety he feels. This is considered a natural reaction to the state of stress felt by the individual, and the state of GAD increases for individuals in the Egyptian society.

11. Recommendations

In the light of the previous results, the researcher concluded with a set of recommendations summarized as follows:

1. The necessity of making strategic alliances in the medical field and the technological field between South Korea and the rest of the world in order to benefit from its experience in the field of confronting COVID-19.
2. The necessity of conducting many research and studies in the field of artificial intelligence as one of the tools that can be used in facing COVID-19.
3. Increasing awareness campaigns on COVID-19 and viewing it as a disease like other diseases that require diagnosis and treatment, and focusing on the need for the patient to contact the relevant authorities as soon as symptoms appear on him so that his health and psychological condition does not worsen.
4. Seeking assistance from specialists in awareness programs and disseminating all information through social media for the purpose of awareness and prevention of infection COVID-19.
5. Providing psychological service to COVID-19 patients inside hospitals in a manner that raises their spirits and confronts this virus. This is in addition to conducting many research studies in the field of coping with COVID-19 and reducing its psychological effects.
6. The necessity for the Egyptian Ministry of Health to enhance the level of mental health for all members of society by establishing a psychological aid unit and taking over work to reduce the problems of fear and psychological anxiety from COVID-19.
7. Spreading positive feelings among enough community members through the media, explaining that COVID-19 will be overcome, and providing the necessary awareness programs to reduce anxiety problems, sleep disorders and others.
8. Researchers and scholars in the field of psychology and mental health shall conduct research and studies through which counseling and validation programs for community members are published, focusing on limiting the effects of the spread of COVID-19.
9. Expanding the study of psychological immunology, and focusing on the psychological immunity variables in reducing and mitigating the negative effects of COVID-19, which are resilience, recovery, coping, mindfulness, and social support. This is in addition to the necessity of training on psychiatric immunology skills.
10. Paying attention to psychological support programs for different groups of students during the COVID-19 period and expanding the applications of positive orientation in psychology, especially in the field of education.
11. Designing a set of programs based on mental immunity by imposing a reduction in anxiety resulting from COVID-19, and working to link mental immunity with methods of protection from COVID-19.
12. The need to provide a set of psychological and therapeutic programs on the part of psychological institutions with the aim of mitigating the psychological effects of COVID-19. Neglecting it will have serious consequences at the individual and community level, and it also leads to the spread of depression and psychological loneliness between members of the society.
13. Overcoming OCD by not suspecting that everyone around me is infected, and not using sedative drugs without the need for them, and not exaggerating the use of preventive measures.
14. The importance of overcoming the post-traumatic stress phase through adequate rest and calm, controlling personal emotions, integrating individuals, avoiding isolation, and taking precautionary measures.
15. Overcoming public anxiety disorders by dealing with COVID-19 as a curable virus, not being afraid of making important decisions, and having confidence in the cure of a large number of diseases afflicted by COVID-19, and raising their spirits.

12. Future Studies

The present study attempts to reveal the psychological effects of COVID-19 and its impact on the JE, but the scope of this study, the methods used and its findings indicate that there are areas for other future studies.

Among these research areas are (1) the impact of COVID-19 on job performance, (2) the role of psychological effects of COVID-19 in increasing workplace anxiety, (3) the impact of COVID-19 on unproductive work behaviors, (4) the role of psychological effects of COVID-19 in increasing administrative corruption, (5) the impact of psychological effects of COVID-19 on mental health of workers, (6) the impact of raising morale in reducing the effects of COVID-19, (7) the role of psychological immunity in reducing the effects of COVID-19, (8) the role of human resource maintenance strategies in overcoming the negative psychological effects of COVID-19, and (9) the role of artificial intelligence in facing the effects of COVID-19, and (10) the impact of COVID-19 on education, tourism and the Egyptian economy.

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